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09/786,903	05/09/2001	Jens Stefan Schneider	10191/1714	7920

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KENYON & KENYON
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER

TUNG, TA HSUNG

ART UNIT	PAPER NUMBER
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1753

7

DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/786,903

Applicant(s)

SCHNEIDER

ETAL

Examiner

A. TUNG

Group Art Unit

1743

Paper No. 7

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 10-18 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 10-18 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some* ☐ None of the:
 - ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

Application/Control Number: 09/786,903

Art Unit: 1102

Claims 10-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The disclosure is inadequate in that the composition of the measuring electrode is unclear. The measuring electrode is stated to be a "cermet" electrode. A "cermet" is a mixture of a ceramic component and an elemental metal component. In a typical solid electrolyte sensor, a "cermet" electrode comprises a mixture of a metal such as Pt and a ceramic that is generally the same as the solid electrolyte (e.g. zirconia). It is not evident whether the ceramic component in the case of applicant is a ceramic such as zirconia or whether the ceramic component is the metal oxide component (e.g. as recited at claim 10, line 6) of the electrode. It is also not evident if the metal part of "cermet" is the gold or silver called for in claim 13 or the metal portion of the metal oxide component. If the former, applicant's claims would call for the measuring electrode to have both a metal oxide component and an elemental metal component. Applicant should clarify his disclosure in this regard without the introduction of new matter.

The subject matter of claim 14 is also not adequately disclosed. The wording appears to call for the electrolyte layer to be integrated into a second layer. Where is the supporting disclosure for this in the specification?

Art Unit: 1102

Further, the subject matter of claim 15 is not adequately disclosed. It is not evident what promoters and catalysts are being incorporated into the electrolyte layer. There does not appear to be any specific embodiment of these promoters and catalysts.

Claims 10-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10, penultimate line, "between" is vague in that it is unclear if the expression calls for the electrodes to be on opposite sides of the electrolyte. For instance, figure 1 of Kurosawa et al 6,019,881 shows electrodes 2 and 3 arranged on the same side of an electrolyte 1. Yet, there is still electrolyte between the electrodes.

Claim 14, the wording is vague in that it is not evident if two layers (an electrolyte layer being integrated into another layer) are being recited.

Claim 17, line 1, if the "porous layer" is the solid electrolyte of parent claim 10, they need to be corresponded.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Art Unit: 1102

While rejections under 35 USC 103 by way of 102(e) is prohibited by the American Inventors Protection Act (AIPA), such prohibition does not apply to rejections under 35 USC 102(e).

Claims 10, 14, 15 are rejected under 35 USC 102 (e) as anticipated by Kohler et al 6,168,700.

Kohler discloses a solid electrolyte sensor with a measuring electrode 1, a porous solid electrolyte 4 and a second electrode 5. The measuring electrode 1 comprises a metal oxide that can be doped with a noble metal and does not have the ability to catalyze the establishment of an equilibrium in a gas mixture sample, while the second electrode 5 of Pt can catalyze the establishment of an equilibrium in the gas mixture. See col. 2, line 50 to col. 3, line 45.

The fact that the patent calls electrode 5 a "reference electrode" while applicant calls his second electrode a "measuring electrode" is irrelevant, since these terms relate to intended usage and do not define structural distinction.

As for the first electrode being a cermet electrode, it is unclear if applicant's claims call for more than the metal oxide component of the electrode to be the ceramic component of the cermet.

In regard to claim 15, Kohler at col. 3, lines 19-21 discloses adding Pt to the solid electrolyte. Pt presumably would function as a catalyst.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Application/Control Number: 09/786,903

Art Unit: 1102

Claims 10, 13 are rejected under 35 U.S.C. 102(e, a) as being anticipated by Kurosawa et al 6,143,165 or Kurosawa et al 5,897,759.

Patent '165 discloses a first electrode 2 comprising a metal oxide and a metal (Au or Pt), a solid electrolyte 1 and a second electrode 3 of Pt. See col. 2, line 53 to col. 3, line 50. Patent '759 also discloses a first electrode 2 comprising a metal oxide and Au, a solid electrolyte 1 and a second electrode 3 of Pt. See col. 2, line 32 to col. 3, line 36.

The Pt second electrode clearly would catalyze the establishment of an equilibrium in a gas mixture sample, since applicant discloses Pt as a suitable electrode material for that purpose. The first electrode of metal oxide and Au presumably would not catalyze the establishment of an equilibrium in a gas mixture. Even if the metal oxide does not function in this desired manner, the Au component would function thusly.

As for the first electrode being a cermet electrode, the metal oxide can be considered to be the ceramic component. Note that applicant does not appear to disclose any ceramic component in addition to the metal oxide component in his cermet electrode.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Application/Control Number: 09/786,903

Art Unit: 1102

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa et al '165 or Kurosawa et al '759 in view of Logothetis et al 4,487,680.

This claim differs by calling for the solid electrolyte to be porous.

Logothetis discloses a porous solid electrolyte 12. See col. 4, lines 62-66. It would have been obvious for either Kurosawa to adopt a porous solid electrolyte in order to provide an enclosed volume for establishing a gaseous reference partial pressure, as discussed at col. 2, lines 62-66 of Logothetis. A porous solid electrolyte would eliminate the need for a reference gas channel that would require additional sensor components and more space.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa et al '165 or Kurosawa et al '759, Logothetis et al in view of Radford et al 3,843,400 or Shiratori 6,218,036.

This claim further differs by calling for the solid electrolyte to contain a promoter.

Radford discloses adding alumina to a solid electrolyte as a sintering aid. See col. 3, lines 6-9. Shiratori discloses adding alumina to a solid electrolyte to enhance its strength. See col. 1, lines 40-45. It would have been obvious for either Kurosawa to incorporate alumina into its solid electrolyte in view of the secondary references so as to provide a sintering aid and/or a strength promoter.

Claims 10, 12, 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurosawa et al 6,019,881.

Art Unit: 1102

Kurosawa '881 discloses a first electrode 2 comprising a metal oxide (e.g. Mn_2O_3), a solid electrolyte 1 and a second electrode 3 of Pt. See col. 2, line 49 to col. 3, line 28; col. 4, line 64 to col. 5, line 48. The discussion in the paragraph connecting columns 2 and 3 appears to call for a noble metal (e.g. Au) in the first electrode.

Claims 10, 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa et al '881 in view of Kurosawa et al '165 or Kurosawa et al '759.

If the '881 patent were construed as not to disclose a metal (e.g. Au) component in the first electrode, applicant's claims differ in that respect.

As discussed before the '165 patent (col. 3, line 3) or the '759 patent (col. 3, lines 14-19) discloses adding a Au component to a metal oxide electrode. It would have been obvious for the '881 to do the same in order to enhance the conductivity of the electrode. Also, all three patents are drawn to totally analogous art and there is no unexpected result.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa et al '881, with or without Kurosawa '165 or Kurosawa et al '759, in view of Logothetis et al.

This claim differs by calling for a porous solid electrolyte. As discussed before, Logothetis renders that obvious.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa et al '881, with or without Kurosawa et al '165 or Kurosawa et al '759, in view of Logothetis et al and Radford et al or Shiratori.

Application/Control Number: 09/786,903

Art Unit: 1102

This claim further differs by calling for the addition of a promoter to the solid electrolyte. As discussed before, that is rendered obvious by Radford or Shiratori.

Friese et al 5,630,920 discloses a sensor comprising a measuring electrode 11 that does not catalyze the establishment of an equilibrium in a gas mixture. However, the electrode does not contain a metal oxide component. In fact, col. 3, line 8 appears to suggest the avoidance of a metal oxide.

DE 4408504, cited in the IDS of May 9, 2001, has been considered only to the extent of its discussion at pages 3-4 of the instant specification. If applicant is aware of an English language equivalent, he should submit a copy thereof for consideration.

Applicant's substitute specification was submitted without a marked-up version. Thus, it is not evident what changes have been made, and a check for new matter has not been carried out. Applicant is called upon to submit a marked-up version with his response.

Applicant has submitted a copy of a document titled "SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS Supplementary services for multimedia" comprising 44 pages not counting the table of contents. This document is not listed in the May 9, 2001 IDS and its relevance is unclear. It is likely that this document was submitted in error or was placed into the instant files by mistake at the Office. Applicant is invited to respond.

The examiner can be reached at 703-308-3329. His supervisor Nam Nguyen can be reached at 703-308-3322. Any general inquiry should be directed to the receptionist at 703-308-0661. A fax number for TC 1700 is 703-872-9310.

Application/Control Number: 09/786,903

Page 9

Art Unit: 1102



Ta Tung

Primary Examiner

Art Unit 1743